

hardened. We are told that the origin of the operculum is very difficult to explain, that it represents a formation "*sui generis*," and that its "finely striated horn- or chitin-like substance" is to be derived from no part of the integument. In order to remove the difficulties as to the origin of the operculum, the author suggests the possibility that it may arise from the envelopes of the egg which is placed upon the back of the female at the time of sexual congress.

If, in opposition to these statements of Klinckowström, we allow my interpretation to stand, in accordance with which the alveolus is originally an enlarged cutaneous gland, the matter is settled in a simpler manner; for it was repeatedly pointed out by me that in the cutaneous glands of the Batrachians the secretion, in consequence of thickening and hardening, forms a kind of plug, which remains in the orifice of the gland. I regard this "plug" of the cutaneous glands and the "operculum" of the alveoli as equivalent formations; the operculum is, in my opinion, a plug of secretion developed superficially. By this assumption the idea that the operculum is a structure of a special kind is disposed of.

Furthermore, in opposition to the view that the alveolus arises through invagination of the integument, it might be asserted that, were this correct, small mucus-glands must still be present in the wall of the alveolus, since these must be involved in the process of invagination of whole portions of the skin; yet no trace of such is visible.

In conclusion, one may perhaps also recall the fact that a process to some extent corresponding to the formation of alveoli in *Pipa* takes place elsewhere in the case of Mammals. Here, also, in the formation of the placenta the sprouting tufts of the chorion do not grow into newly arising depressions in the mucous membrane, but into the ducts of the uterine glands, which were already in existence and now undergo further modification.

MISCELLANEOUS.

The Bot-fly of the Indian Elephant.

At a meeting of the Mathematical and Natural Science Section of the Imperial Academy of Sciences of Vienna held on July 2nd, 1896, a communication was made by Prof. Friedr. Brauer to the effect that, in conjunction with Herr Anton Handlirsch and with the courteous cooperation of Herr Alois Kraus, Inspector of the Imperial

Menagerie at Schönbrunn, he had succeeded in breeding out the œstrid of the Indian elephant (*Cobboldia elephantis*, Cob.), which was hitherto known only in the larval state. Since it is the intention of Prof. Brauer to furnish fuller details later in a special memoir, he contents himself with giving the following short diagnosis of the genus and species in the perfect condition:—

Genus COBBOLDIA, Brauer.

Head vesicular, with strongly projecting front. Antennæ extremely prominent, owing to the large hatchet-shaped third joint, with fine and bare arista. Beneath the antennæ a very broad and deep heart-shaped antennary pit, without a septum, extending to the oral margin; therefore the facial ridge very short between the facial angles ("Vibrissenecken"). Oral cavity deep, the rudiment of the proboscis fairly well developed, as in *Cephenomyia*, with large claviform palpi. Face and cheeks shining, bearing tubercles ("schwielig"). Ocelli present, eyes bare. Thoracic suture complete. Wings large. Apical transverse vein present, posterior transverse vein nearer to the angle of the third vein than to the small transverse vein; angle of the third vein V-shaped, without projecting stump; first posterior cell open. Alula of moderate size, squamæ very large. Clavi and pulvilli moderately large. Legs slender, short; first tarsal joint as long as all the others put together. Abdomen elongate, oval, in the male with forceps-shaped hypopygium tucked under it; in the female the ovipositor straight, telescopic, chitinous, divided into four segments (when protruded half as long as the body). Ventral plates triangular, separated from the dorsal ones by a broad membrane. Fifth plate cleft in the male. Macrochaetæ absent. Hypopleuræ with a row of hairs.

Spec. *Cobboldia elephantis*, Cob.

Gastrophilus elephantis, Cob. olim (from the larva), Trans. Linn. Soc. 1881.

Cobboldia elephantis, Brauer (from the larva), Wien. ent. Z. 1887.

Black, short and thickly clothed with hair; head and antennæ reddish yellow; proboscis and palpi black. Wings dark, blackish blue, metallic; basal cells, alulæ, and squamæ snow-white. Halteres and legs black. On the head and on the margins of the abdominal segments silvery white reflexions. In general appearance resembling a *Pharyngomyia*. Female with the front broader and the ovipositor black; otherwise precisely like the male.

Length of body 12–14 millim.

Length of wing 10–11 millim.

The larvæ leave the host in the early hours of the morning, pupate in from one to two days, and the imago appears sixteen days after the exit of the larvæ. Copulation takes place immediately.—*Sitzungsb. kais. Akad. der Wiss. Wien*, Jahrg. 1896, no. xvii. pp. 180–182.